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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,030	05/30/2001	Hiroyuki Baba	33626	6747
116	7590	10/15/2003	EXAMINER	
PEARNE & GORDON LLP 1801 EAST 9TH STREET SUITE 1200 CLEVELAND, OH 44114-3108			CHAPMAN JR, JOHN E	
			ART UNIT	PAPER NUMBER
			2856	

DATE MAILED: 10/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/870,030

Applicant(s)

BABA ET AL.

Examiner

John E Chapman

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) 28-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114 was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 18, 2003 has been entered.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. The disclosure is objected to because of the following informalities:

Page 36, lines 30 and 31, "reduced to be saturated" is unclear.

Appropriate correction is required.

4. Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over either JP 62-10356 or the admitted prior art.

Regarding claims 1, 9 and 12-17, the only difference between the claimed invention and the prior art consists in the height of the sensor casing 1 of Fig. 1 of JP 62-10356 (or sensor casing 801 of Fig. 25 of admitted prior art) relative to its width. A mere change in size or shape is generally recognized as being within the level of ordinary skill in the art. See *In re Rose*, 105 USPQ 237 (CCPA 1955).

Regarding claims 2 and 10-11, the spacing between the plate and the top and bottom walls of the casing comprises a mere change in size or shape.

Regarding claim 3, it would have been obvious to place the piezoelectric transducer on either surface of the oscillating plate, since it would have been obvious to one of ordinary skill in the art that either would function in substantially the same manner to produce substantially the same result.

Regarding claim 4, note Fig. 3 of JP 62-10356 (or Fig. 27 of admitted prior art).

Regarding claim 5, note the above remarks regarding claims 3 and 4.

Regarding claims 6-8, it would have been obvious to place the piezoelectric elements on both surfaces of the oscillating plate in order to duplicate the signal and thereby increase the signal-to-noise ration.

Regarding claim 10-11, the spacing between the plate and the top and bottom walls of the casing comprises a mere change in size or shape.
note the above remarks regarding claims 3 and 4.

Regarding claims 18-27, note Fig. 3 of JP 62-10356 (or Fig. 27 of admitted prior art).

5. Applicant's arguments filed July 18, 2003 have been fully considered but they are not persuasive.

Applicant argues that the claimed invention is patentably distinct from the prior art because each of the numerical limitations in the claims are of a critical nature, and the claimed relative dimensions perform differently than in the prior art devices. Applicant's arguments are

not persuasive because there is no showing that the numerical limitations in the claims are critical, i.e., that a height to width ratio of 1:10 of the sensor casing ensures that standing waves are prevented from being generated in the closed space of the acceleration sensor. Nor is there a showing that such a ratio ensures that the frequency of acoustic resonance is beyond the upper limit of the usable range of the frequency of the acceleration sensor. Consequently, there is no showing that the desired results are commensurate in scope with the claimed invention.


Furthermore, whether acoustic resonance is within the usable range of the acceleration sensor, depends on the usable range of the acceleration sensor as well as the size of the sensor. See page 32, lines 33-37, where it is assumed that the usable range of the acceleration sensor is below 20 kHz. Note also that it is necessary that $L \leq 8.59$ mm to prevent standing waves. Consequently, in order that a height to width ratio of 1:10 prevent standing waves, it is necessary that the diameter D of the casing be less than 85.9 mm. The claims, however, do not specify either a limit (e.g., 20 kHz) to the usable range of the accelerometer, or a limit (e.g., 85.9 mm) to the diameter of the casing. Consequently, the claims are not commensurate in scope with the desired result of ensuring that the frequency of acoustic resonance is beyond the upper limit of the usable range of the frequency of the acceleration sensor.

Applicant refers to the specification at page 36, lines 3-9, wherein applicant states: "Through our experimental results, the distances L1 and L2 are to be smaller than about 0.1 times the diameter D of the inner surface of the fixed case member 501 and the cover member 504." As best understood, the distances L1 and L2 are chosen so as to set a relatively large acoustic resistance in the closed space V for the purpose of preventing a standing wave from being

generated in the direction along the diameter D of the inner surface of the case member 501. See page 33, lines 34-36, and page 34, lines 14-19. However, whether standing waves are prevented appears to depend upon the width η of the annular gap between the inner surface of the fixed case 501 and the peripheral end of the oscillation body 505, and the resonance frequency f_0 of the oscillation body 505, as well as the distances L1 and L2. See page 36, lines 25-36. The claims, however, do not limit either the width of the annular gap between the inner surface of the fixed case and the peripheral end of the oscillation body or the resonance frequency of the oscillation body. Consequently, the claims do not appear to be commensurate in scope with the desired result of ensuring that the frequency of acoustic resonance is outside the usable range of frequencies of the acceleration sensor.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Chapman whose telephone number is (703) 305-4920.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.


JOHN E. CHAPMAN
PRIMARY EXAMINER